

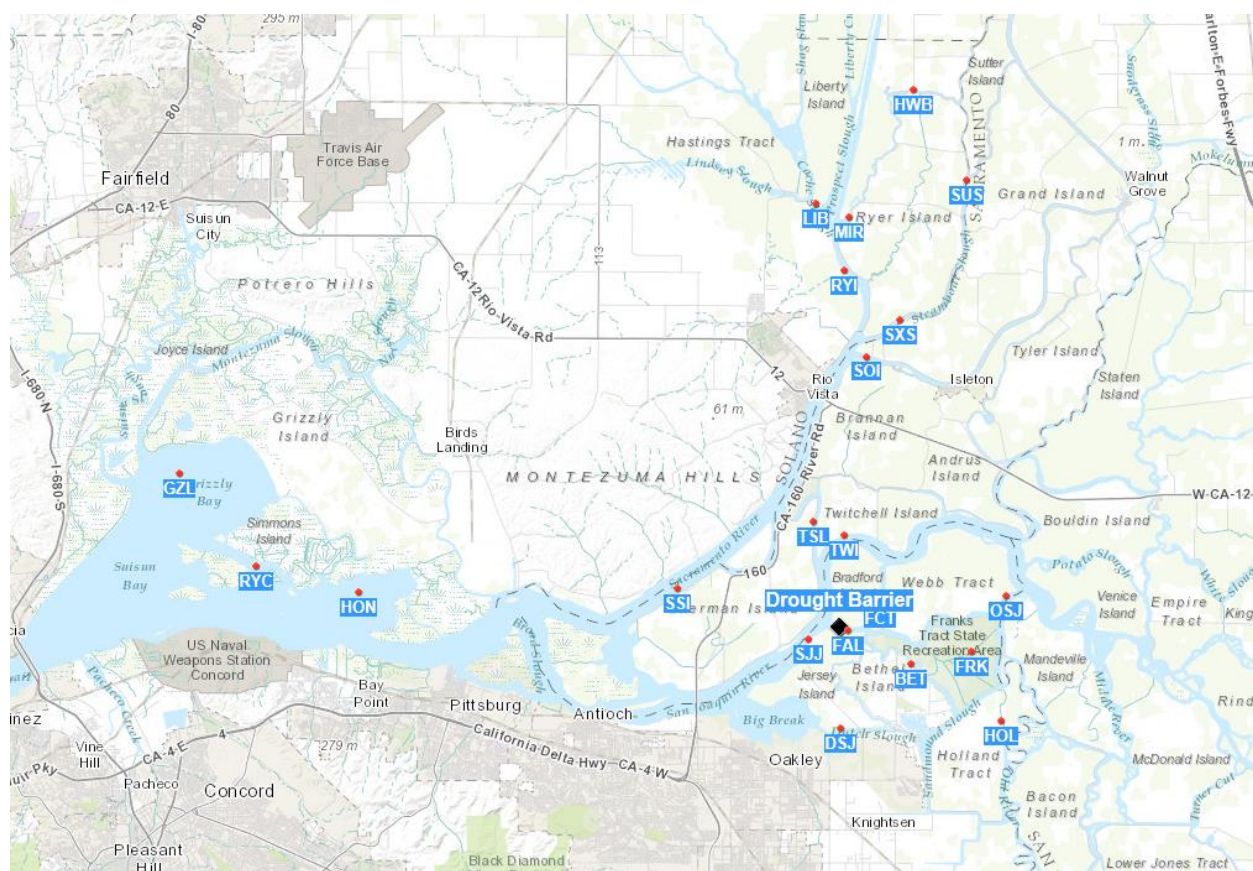
## Emergency Drought Barrier Water Quality Monitoring Summary<sup>1</sup>

### Weekly Update for September 28 through October 4, 2015

Below is a summary of water quality, flow, and velocity data since the hydraulic closure of the Emergency Drought Barrier (EDB) at West False River on May 28, 2015, with emphasis on trends observed during the past week. The EDB rock placement was completed on June 12, 2015. On October 1, 2015, the contractor began breaching the EDB, allowing tidal flows to resume passing through the False River channel.

For additional water quality monitoring data, access the network of CDEC stations at the following link:

<http://dwr.maps.arcgis.com/apps/Viewer/index.html?appid=3be5e0bbe0994b76883b0567f4f6b9e3>



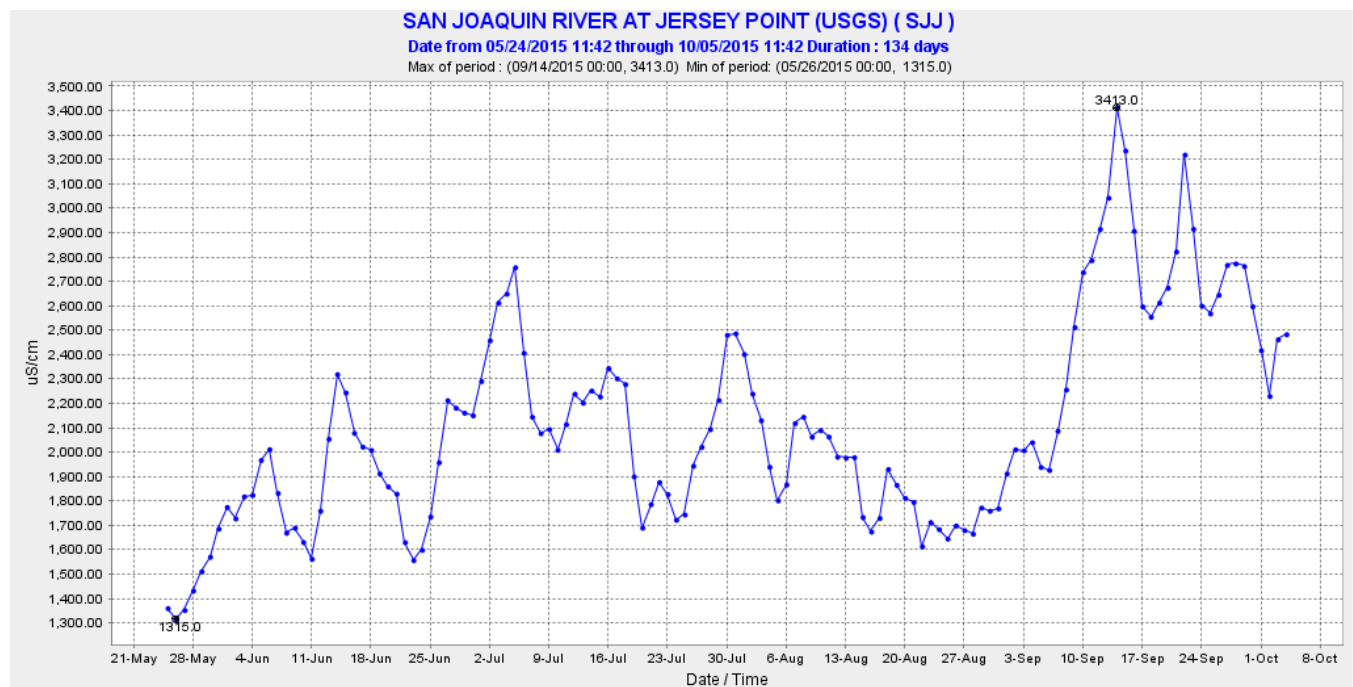
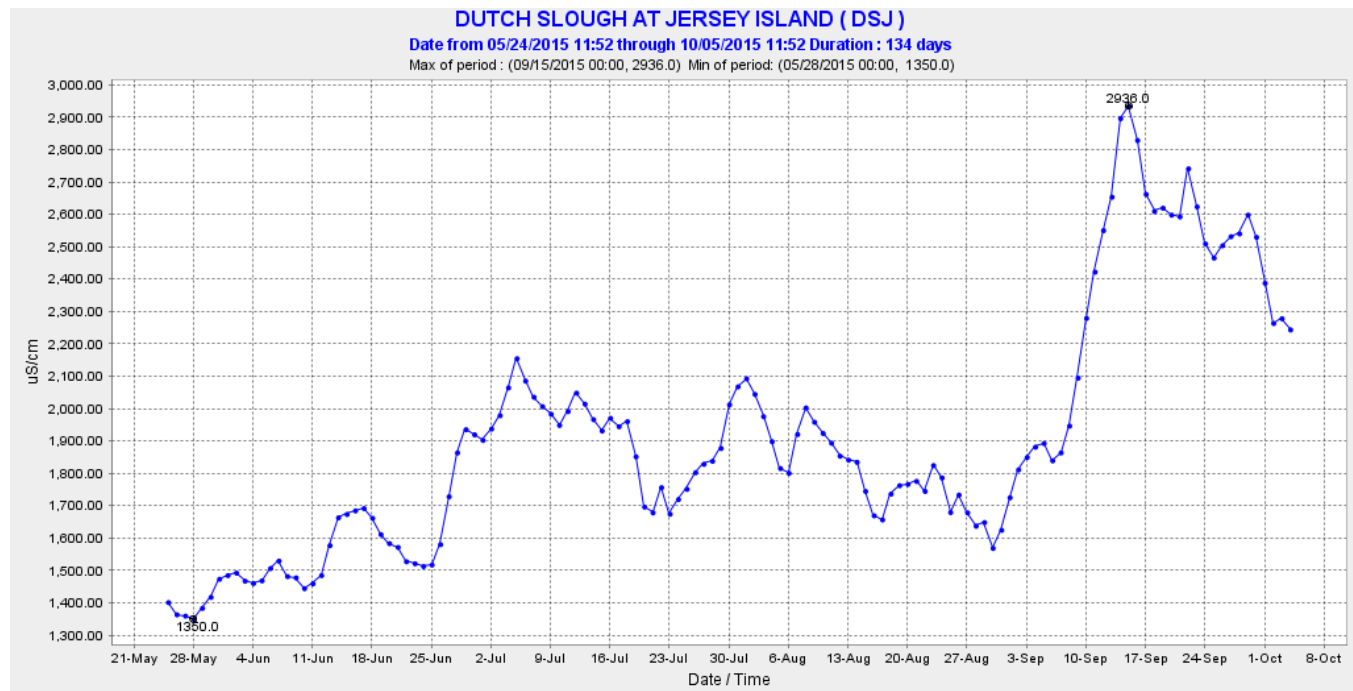
### Specific Conductivity

During the past week, average daily specific conductivity (EC) levels decreased slightly at stations below the EDB—Dutch Slough at Jersey Island (DSL), and San Joaquin River at Jersey Point (SJJ); but increased at the station upstream of the EDB—False River (FAL). EC at FAL increased to 1,726  $\mu\text{S}/\text{cm}$ —the highest daily average EC level

<sup>1</sup> All data in this report and subsequent weekly reports posted to California Data Exchange Network (CDEC) are preliminary and have not yet been validated.

observed at FAL since the EDB was installed. At Fisherman's Cut (FCT) and Holland Cut (HOL) EC levels fluctuated but ended the week at levels similar to the start of the week. At Holland Cut (HOL) average daily EC decreased from 743  $\mu\text{S}/\text{cm}$  on September 28, 2015 to 735  $\mu\text{S}/\text{cm}$  on October 4, 2015.

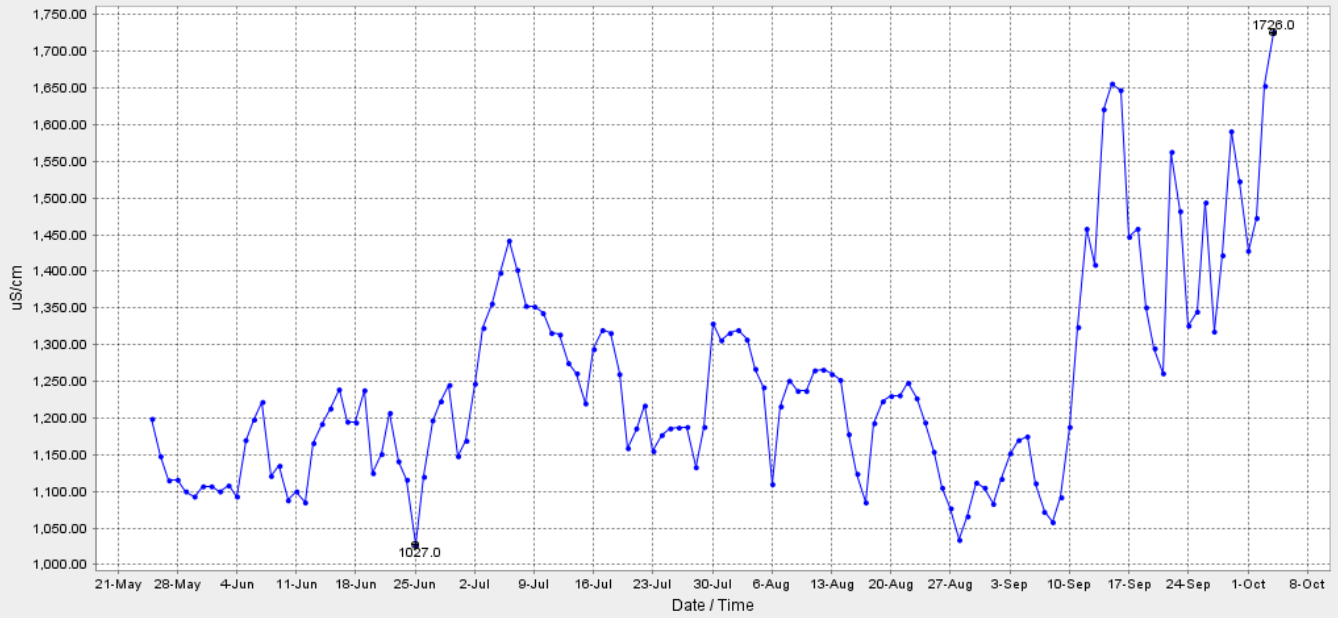
Daily average EC values for five stations in the vicinity of the EDB:



### FALSE RIVER ( FAL )

Date from 05/24/2015 11:55 through 10/05/2015 11:55 Duration : 134 days

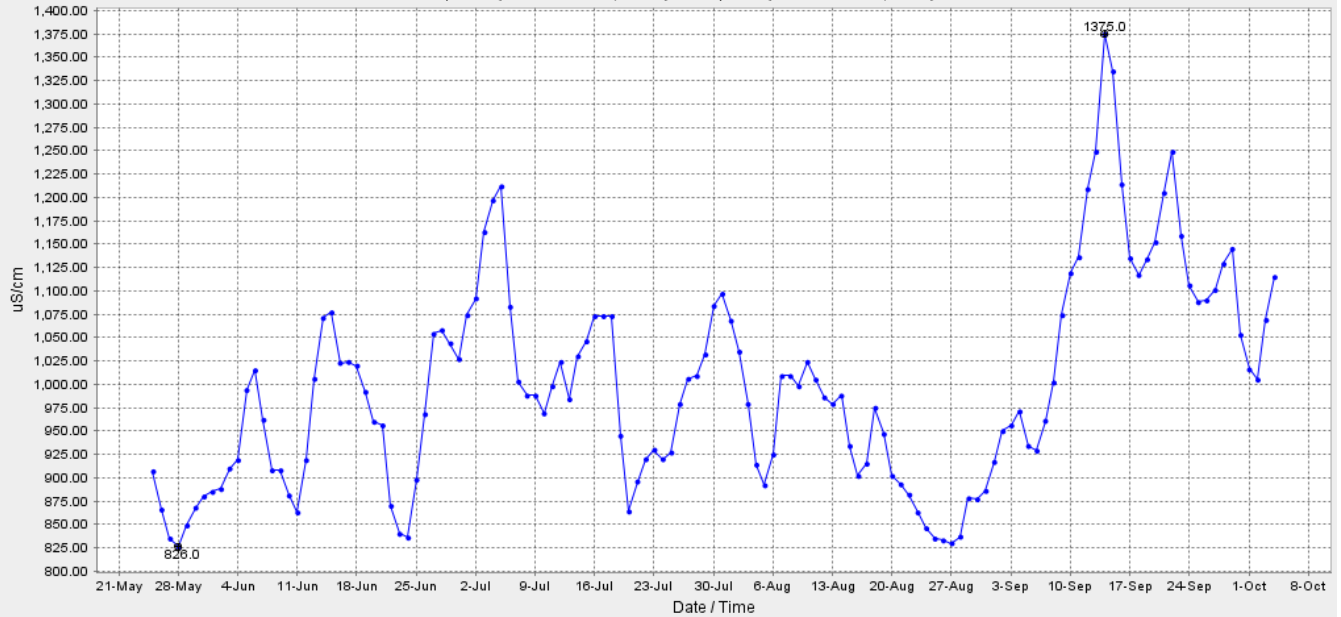
Max of period : (10/04/2015 00:00, 1726.0) Min of period : (06/25/2015 00:00, 1027.0)

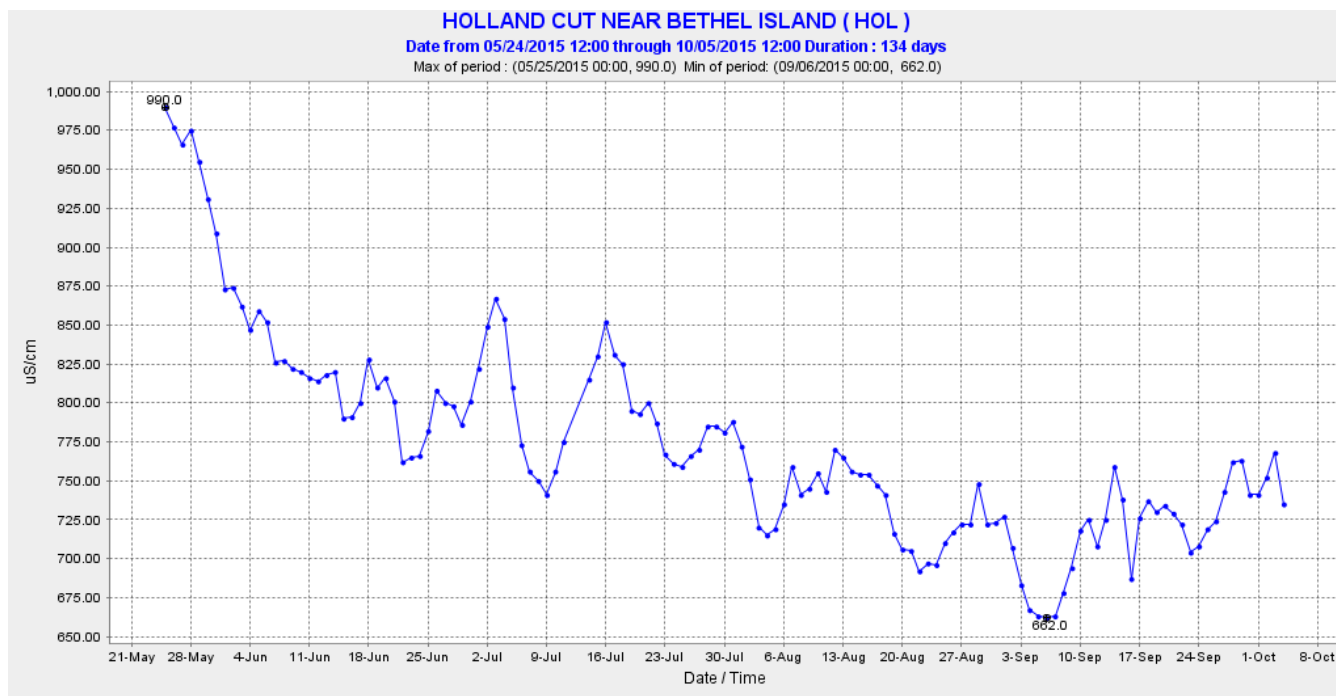


### FISHERMANS CUT ( FCT )

Date from 05/24/2015 11:57 through 10/05/2015 11:57 Duration : 134 days

Max of period : (09/14/2015 00:00, 1375.0) Min of period : (05/28/2015 00:00, 826.0)





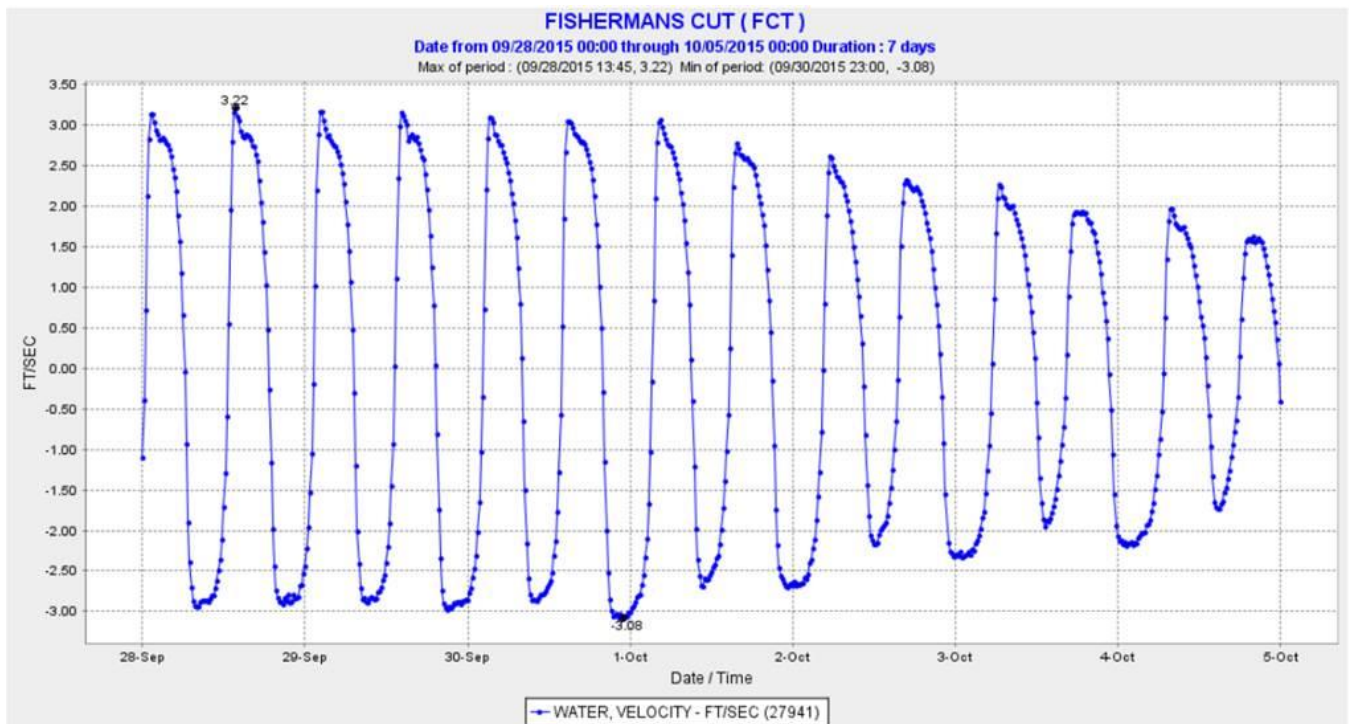
### **Flow and Velocity**

Peak water velocities at the FCT flow station varied between +3.22 ft/s (9/28/15 at 13:45) and – 3.08 ft/s (9/30/15 at 23:00). While the barrier is in place, positive water velocities measured at this station refer to water flowing into Fisherman’s Cut southward from the San Joaquin River. Thus, last week’s peak water velocity of +3.22 ft/s occurred during a flood tide. Flows varied between +12,247 cfs (9/28/15 at 13:45) and –12,830 cfs (9/30/15 at 21:30) indicating a higher peak flow during an ebb tide. The contractor began breaching the EDB on October 1, which appeared to cause a corresponding drop in water velocities and flow rates. During the coming weeks peak water velocities and peak flow rates will likely continue to drop as the barrier is removed. Flow and velocity readings at False River (FAL) will resume once the EDB is completely removed. Accurate flow and velocity measurements utilizing existing station equipment depends on unencumbered flows through the channel.

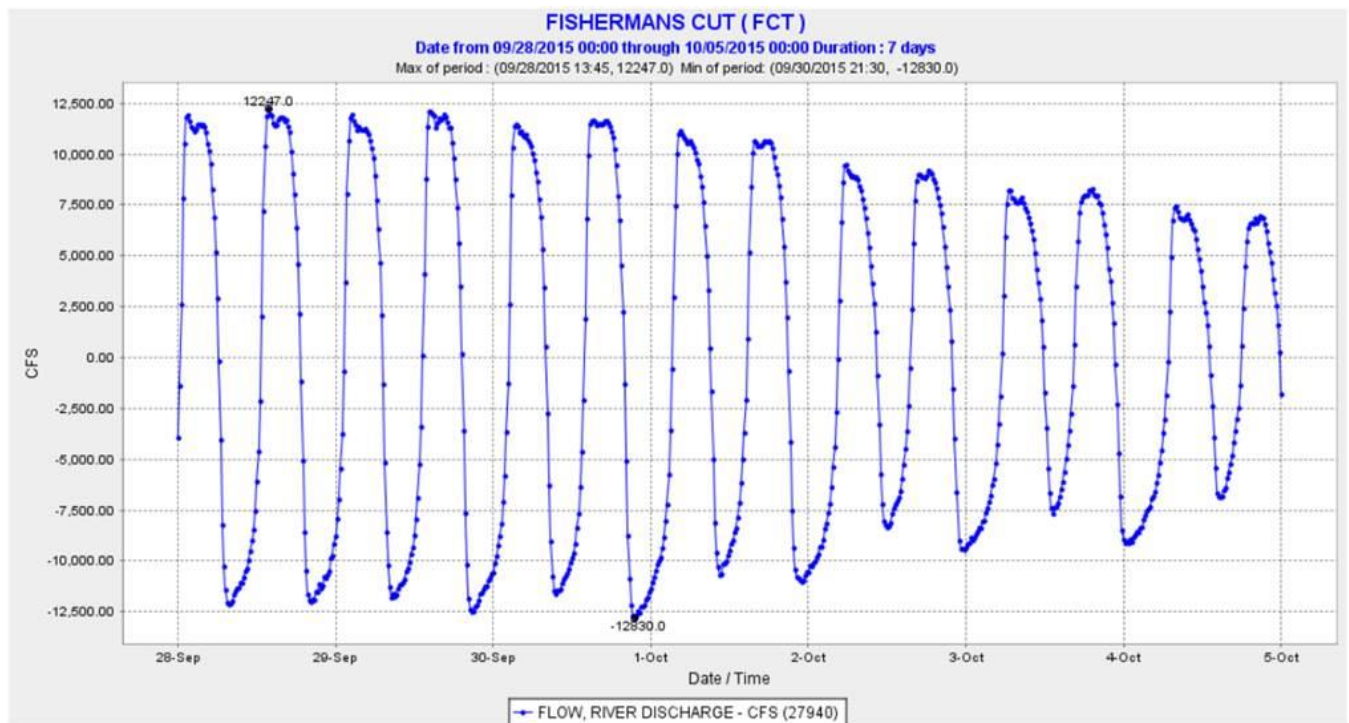
All data will be validated and reported to the Water Data Library. Below are the velocity and flow plots for the last week of data.



15-Minute velocities for FCT in the vicinity of the emergency drought barrier:



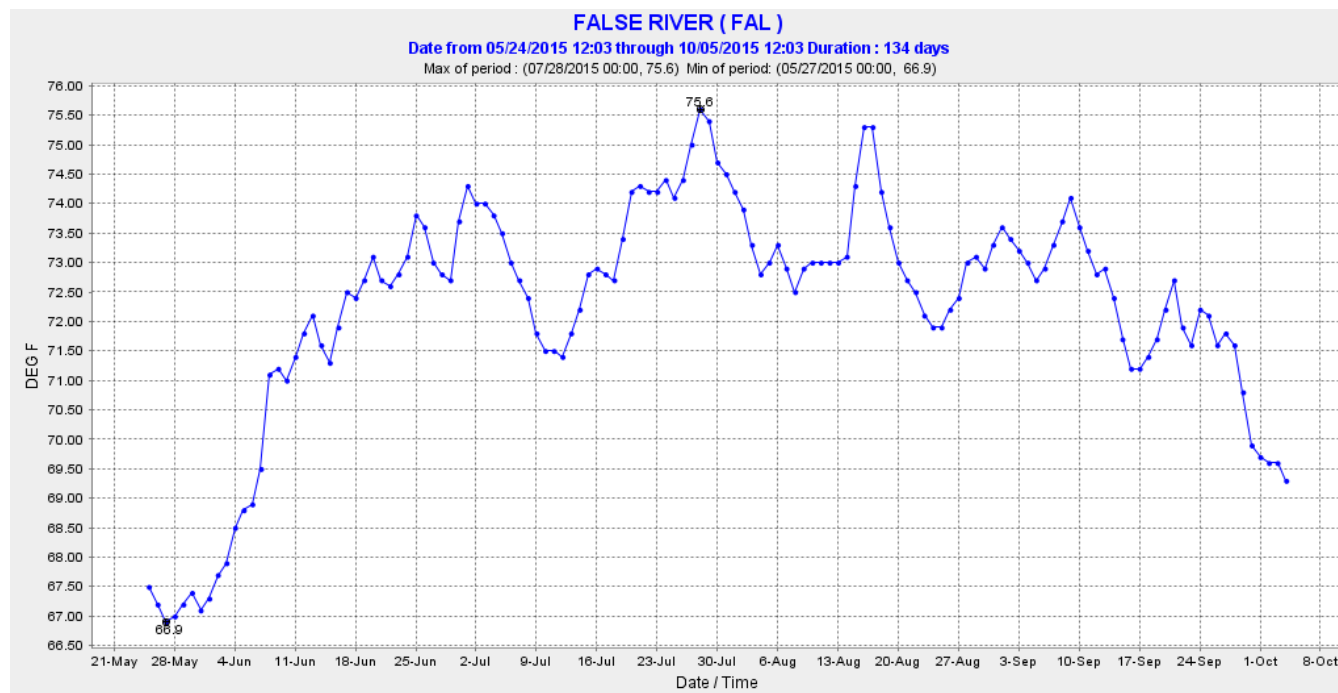
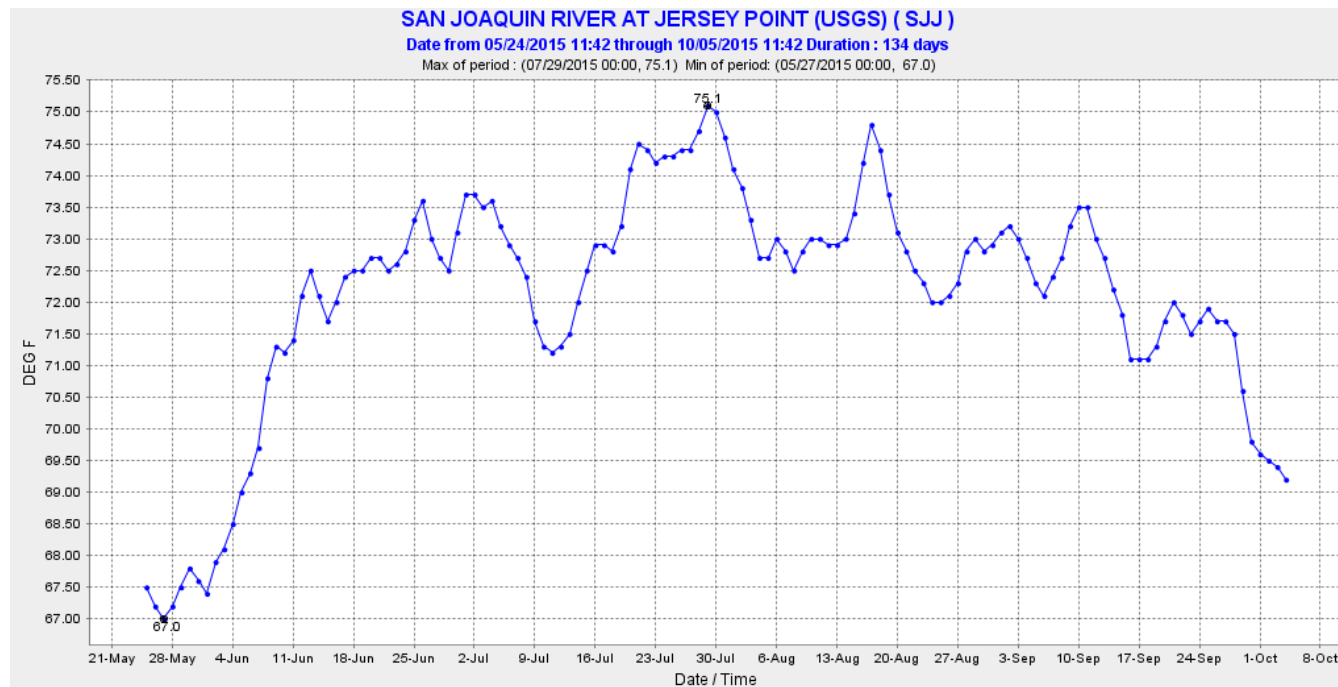
15-Minute flows for FCT in the vicinity of the emergency drought barrier:



## Water Temperatures

During the past week, average daily water temperature decreased sharply at SJJ and at FAL, decreasing by more than 2 °F. at each station.

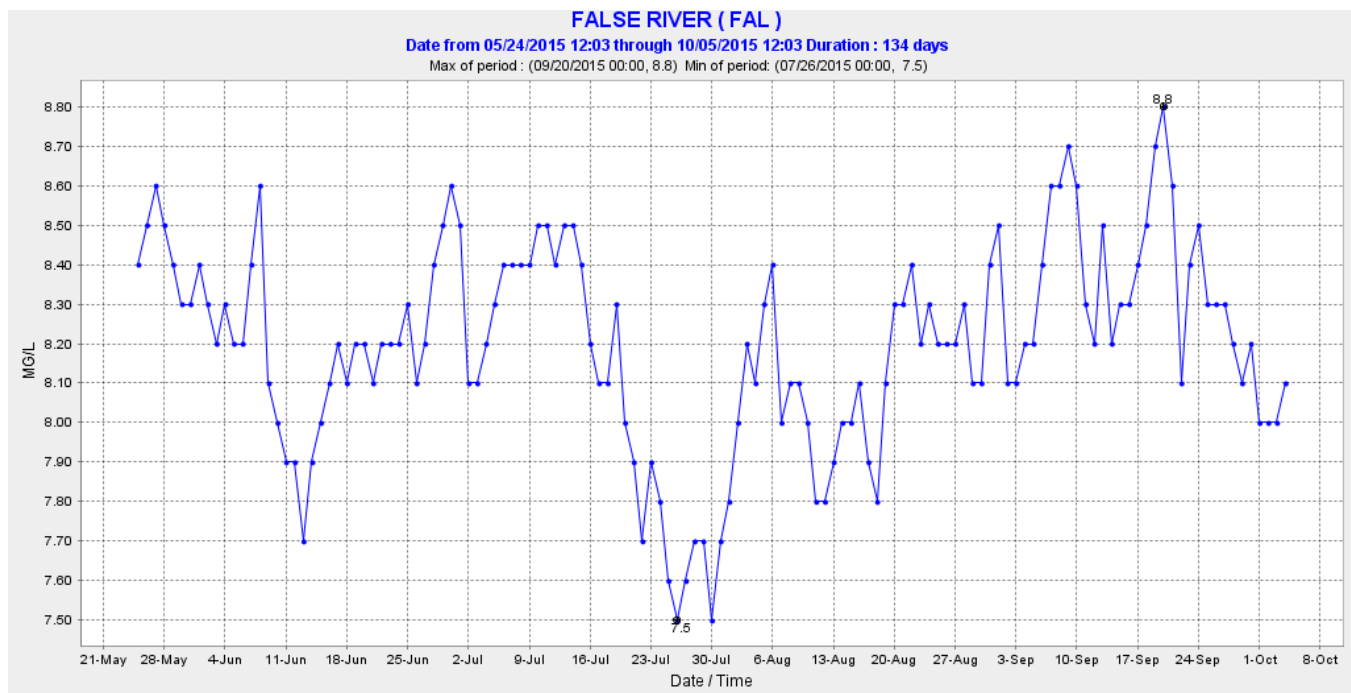
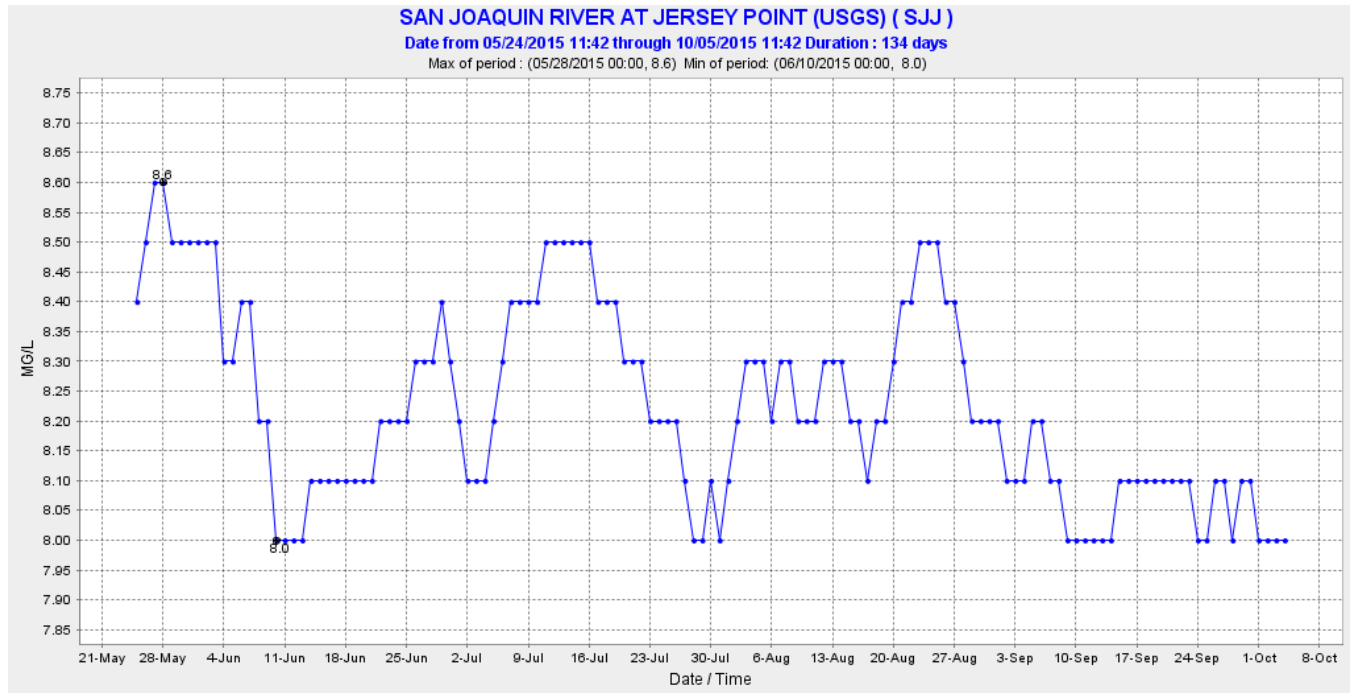
Daily average temperature for stations immediately upstream and downstream of the EDB:



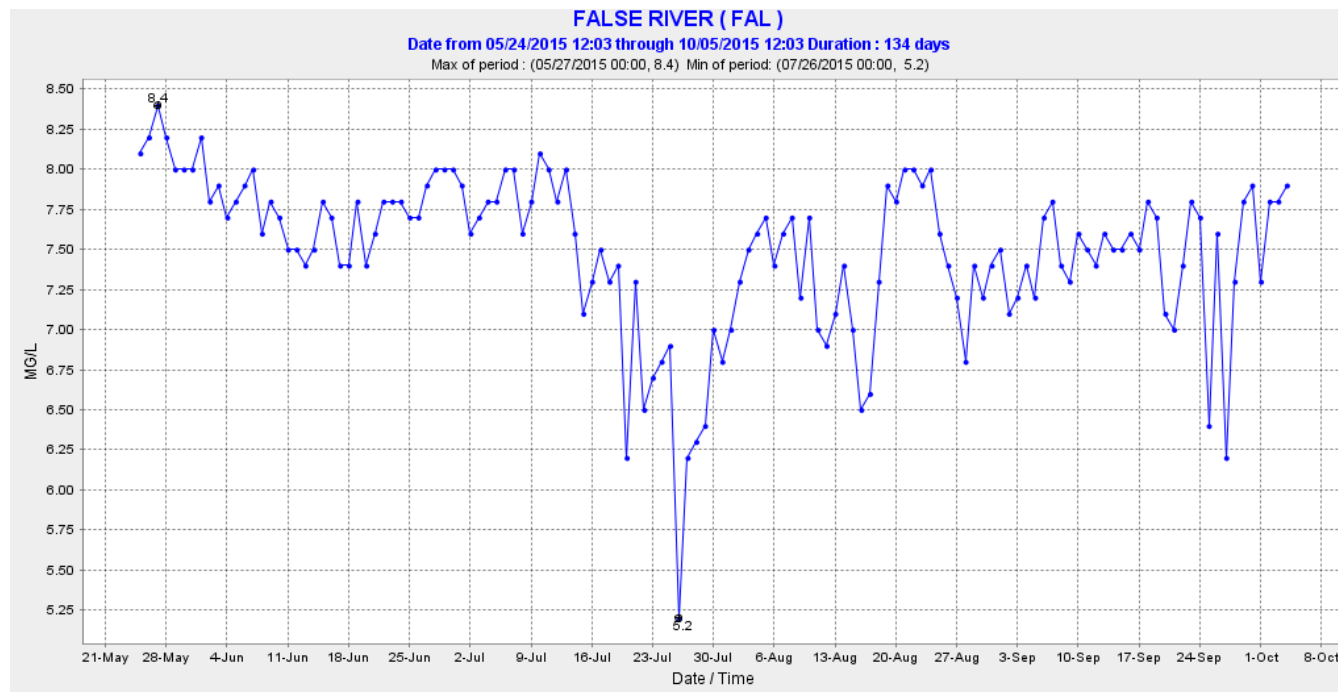
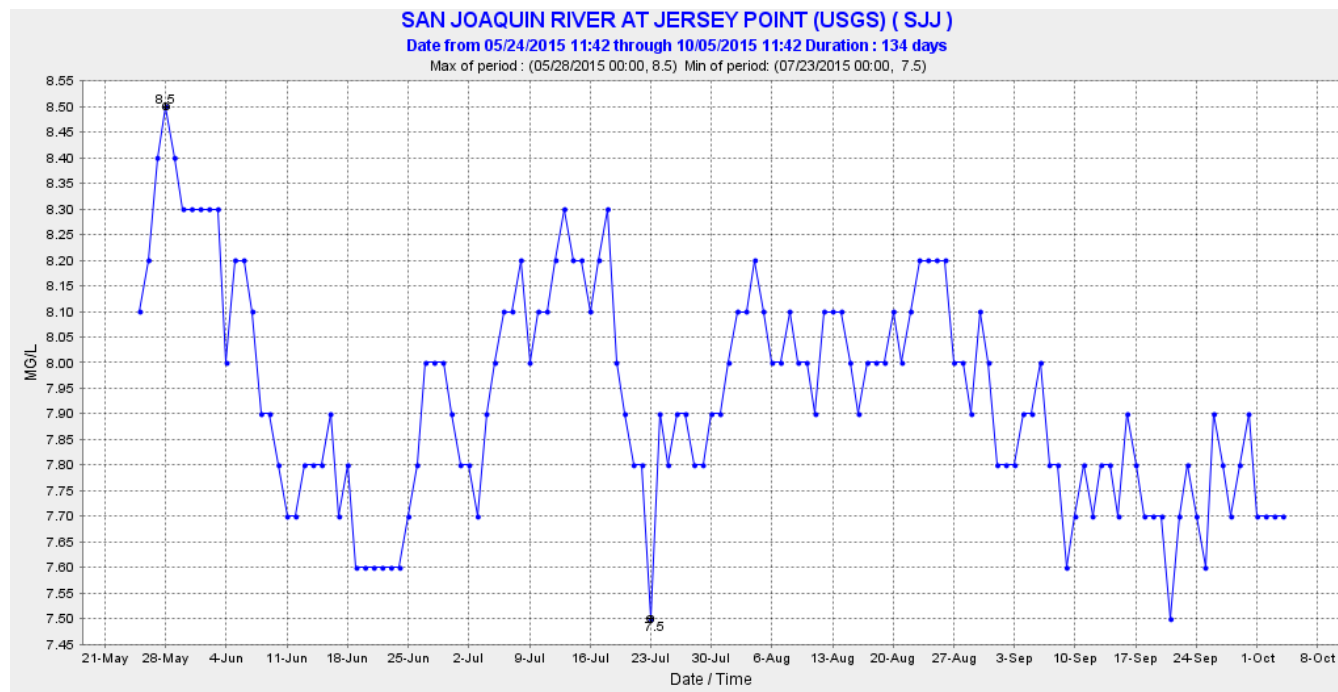
## Dissolved Oxygen

Average daily dissolved oxygen (DO) remained relatively constant at SJJ during the week, but decreased slightly at FAL. Average daily DO remains at or above 8.0 mg/L at each station. Minimum DO levels remained relatively stable at SJJ, but increased at FAL to above 7.25 mg/L each day of the week. DO remains well above the 5.0 mg/l water quality criterion for aquatic life, as it has since the barrier was installed.

Daily average DOES for stations immediately upstream and downstream of the EDB:



Daily minimum DO for stations immediately upstream and downstream of the EDB:





Below is a summary of EC data ( $\mu\text{S}/\text{cm}$ ) by station for the period of September 28, 2015 through October 4, 2015. **Note: Several gaps in SSI data transmittal through CDEC occurred during the past week; thus the summary statistics may not adequately represent this station for the period.**

Station	Mean	Median	Minimum	Maximum	Area
Suisun Bay - Cutoff near Ryer (RYC)	21546	21691.5	17918	24883	Grizzly Bay to Lower Sac River
Grizzly Bay (GZL)	22622	22549	20707	24335	
Sacramento River near Sherman Island (SSI)	6756	6711	2434	11364	
Dutch Slough @ Jersey Island (DSJ)	2403	2370	1860	2890	Dutch Slough
San Joaquin River @ Jersey Point (SJJ)	2518	2340	1150	5310	Vicinity of EDB
Three Mile Slough at San Joaquin River (TSL)	2446	2160	1060	4890	
San Joaquin River @ Twitchell Island (TWI)	1573	1505	681	3033	
Fisherman's Cut (FCT)	1073	986	643	1834	
False River (FAL)	1539	1500	1050	3400	
Bethel Island near Piper Slough (BET)	1006	1008	944	1088	Frank's Tract
Franks Tract Mid (FRK)	922	921	904	949	
Old River near Frank's Tract near Terminous (OSJ)	635	634	554	751	
Holland Cut near Bethel Island (HOL)	750	725	656	980	
Sacramento River downstream of Isleton (SOI)	485	439.5	161	1790	North Delta/Cache Slough
Steamboat Slough near Sacramento River (SXS)	253	209	153	673	
Cache Slough @ Ryer Island (RYI)	272	257	224	437	
Liberty Island @ Approx Cntr S End (LIB)	251	248	225	344	
Miner Slough (MIR)	204	193.5	158	304	
Steamboat Slough downstream of Sutter Slough (SUS)	160	160	153	166	
Miner Slough @ HWY 84 Bridge (HWB)	160	160	153	167	

Below is the mean specific conductance ( $\mu\text{S}/\text{cm}$ ) for the period of September 28, 2015 through October 4, 2015. Means from RYC and GZL are much greater and thus are not shown due to scaling issues.

